What is claimed is:

1 A system for animating an object along a music, comprising:

a sequencer module that sequentially provides music control information and a synchronization signal in correspondence with the music to be played;

a parameter setting module operable to set motion parameters effective to determine movements of movable parts of the object;

an audio module responsive to the synchronization signal for generating a sound in accordance with the music control information to thereby play the music; and

a video module responsive to the synchronization signal for generating a motion image of the object in matching with progression of the music, the video module utilizing the motion parameters to basically control the motion image and utilizing the music control information to further control the motion image in association with the played music.

2 The system as claimed in claim 1, wherein the video module analyzes a data block of the music control information for preparing a frame of the motion image in advance to generation of the sound corresponding to the same data block by the audio module, so that the video module can generate the prepared frame timely when the audio module generates the sound according to the same data block used for preparation of the frame.

3 The system as claimed in claim 1, wherein the video module successively generates key frames of the motion image

in response to the synchronization signal according to the motion parameters and the music control information, the video module further generating a number of sub frames inserted between the successive key frames by interpolation to smoothen the motion image while varying the number of the sub frames dependently on a resource of the system affordable to the interpolation.

4 The system as claimed in claim 1, wherein the video module generates the motion image of an object representing an instrument player, the video module sequentially analyzing the music control information to determine a rendition movement of the instrument player for controlling the motion image as if the instrument player plays the music.

5 The system as claimed in claim 1, wherein the video module generates the motion image according to the motion parameters effective to determine the movements of the movable parts of the object with respect to default positions of the movable parts, the video module periodically resetting the motion image to revert the movable parts to the default positions in matching with the progression of the music.

6 The system as claimed in claim 1, wherein the video module is responsive to the synchronization signal utilized to regulate a beat of the music so that the motion image of the object is controlled in synchronization with the beat of the music.

7 The system as claimed in claim 1, wherein the sequencer module provides the music control information containing a

message specifying an instrument used to play the music, and wherein the video module generates the motion image of an object representing a player with the specified instrument to play the music.

8 The system as claimed in claim 1, wherein the video module utilizes the motion parameters to control the motion image of the object such that the movement of each part of the object is determined by the motion parameter, and utilizes the music control information controlling an amplitude of the sound to further control the motion image such that the movement of each part determined by the motion parameter is scaled in association with the amplitude of the sound.

9 The system as claimed in claim 1, wherein the parameter setting module sets motion parameters effective to determine a posture of a dancer object, and wherein the video module is responsive to the synchronization signal for generating the motion image of the dancer object according to the motion parameters such that the dancer object is controlled as if dancing in matching with progression of the music.

10 An apparatus for animating an object along a music, comprising:

sequencer means for sequentially providing performance data of the music and a timing signal regulating progression of the music;

setting means operable for setting motion parameters to design a movement of the object;

audio means responsive to the timing signal for

generating a sound in accordance with the performance data to thereby perform the music; and

video means responsive to the timing signal for generating a motion image of the object in matching with the progression of the music, the video means utilizing the motion parameters to form a framework of the motion image and further utilizing the performance data to modify the framework in association with the performed music.

11 The apparatus as claimed in claim 10, wherein the video means includes means for analyzing a block of the performance data to prepare a frame of the motion image in advance to generation of the sound corresponding to the same block by the audio means, so that the video means can generate the prepared frame timely when the audio means generates the sound according to the same block used for preparation of the frame.

12 The apparatus as claimed in claim 10, wherein the video means comprises means for successively generating key frames of the motion image in response to the timing signal according to the motion parameters and the performance data, and means for generating a number of sub frames inserted between the successive key frames by interpolation to smoothen the motion image while varying the number of the sub frames dependently on a resource of the apparatus affordable to the interpolation.

13 The apparatus as claimed in claim 10, wherein the setting means comprises means for setting the motion parameters to design a movement of the object representing a

player of an instrument, and wherein the video means comprises means utilizing the motion parameters to form the framework of the motion image of the player and means utilizing the performance data to modify the framework for generating the motion image presenting the player playing the instrument to perform the music.

14 A method of animating an object in association with a music, comprising the steps of:

sequentially providing performance data to perform the music and a timing signal to regulate progression of the music;

provisionally providing motion parameters to design a movement of the object;

generating a sound in response to the timing signal and in accordance with the performance data to thereby perform the music; and

generating a motion image of the object in response to the timing signal to match with the progression of the music, wherein the step of generating a motion image comprises utilizing the motion parameters to form a framework of the motion image, and utilizing the performance data to modify the framework in association with the performed music.

15 The method as claimed in claim 14, wherein the step of generating a motion picture includes analyzing a block of the performance data to prepare a frame of the motion image in advance to generation of the sound corresponding to the same block so that the prepared frame can be generated timely when the sound is generated according to the same block used for preparation of the frame.

16 The method as claimed in claim 14, wherein the step of generating a motion image comprises successively generating key frames of the motion image in response to the timing signal according to the motion parameters and the performance data, and generating a variable number of sub frames inserted between the successive key frames by interpolation to smoothen the motion image.

17 The method as claimed in claim 14, wherein the step of provisionally providing motion parameters comprises providing the motion parameters to design a movement of the object representing a player of an instrument, and wherein the step of generating a motion image comprises utilizing the motion parameters to form the framework of the motion image of the player and utilizing the performance data to modify the framework for generating the motion image presenting the player playing the instrument to perform the music.

18 A machine readable medium for use in a computer system having a CPU and animating an object along a music, the medium containing program instructions executable by the CPU for causing the computer system to perform the method comprising the steps of:

operating a sequencer module that sequentially provides music control information and a synchronization signal in correspondence with the music to be played;

operating a parameter setting module to set motion parameters effective to determine movements of movable parts of the object;

operating an audio module in response to the

synchronization signal for generating a sound in accordance with the music control information to thereby play the music; and

operating a video module in response to the synchronization signal for generating a motion image of the object in matching with progression of the music, the video module utilizing the motion parameters to basically control the motion image and utilizing the music control information to further control the motion image in association with the played music.

19 The machine readable medium as claimed in claim 18, wherein the video module is operated to analyze a data block of the music control information for preparing a frame of the motion image in advance to generation of the sound corresponding to the same data block by the audio module, so that the video module can generate the prepared frame timely when the audio module generates the sound according to the same data block used for preparation of the frame.

20 The machine readable medium as claimed in claim 18, wherein the video module is operated to successively generate key frames of the motion image in response to the synchronization signal according to the motion parameters and the music control information, the video module further being operated to generate a number of sub frames inserted between the successive key frames by interpolation to smoothen the motion image while varying the number of the sub frames dependently on a resource of the computer system affordable to the video module.

21 The machine readable medium as claimed in claim 18, wherein the video module is operated to generate the motion image of an object representing an instrument player, the video module sequentially analyzing the music control information to determine a rendition movement of the instrument player for controlling the motion image as if the instrument player plays the music.

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